

REMARKS

Applicant requests favorable reconsideration and allowance of this application in view of the foregoing amendments and the following remarks.

Claims 1, 3, 5, 7-12, 17, 19, 20, 24, and 26-28 are pending in this application, with Claims 1, 20, 24, and 28 being independent.

Claims 1, 3, 5, 20, 24 and 28 have been amended. Applicant submits that support for these amendments can be found in the original disclosure, and therefore no new matter has been added..

Claims 1, 9, 17, 24, 26-27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Chen et al. patent in view of the Schneider patent. Claims 3, 10-12, and 20 are rejected under 35.U.S.C. §103(a) as being unpatentable over the Chen et al. patent in view of the patents to Schneider and Rallison et al. Claim 5, 7-8, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent to Chen et al. in view of the patents to Schneider and Rallison et al.

In response, while not conceding the propriety of the rejections, independent Claims 1, 20, 24, and 28 have been amended. Applicant submits that as amended, these claims are allowable for the following reasons.

Independent Claim 1 relates to an image processing device comprising an image pick-up device having a fixed positional relationship with respect to a measurement object, an orientation sensor adapted to measure the orientation at an image pick-up visual point of the image pick-up device, a storage unit adapted to store calculation information to calculate the orientation of the measurement object or the position of the measurement object on the basis of an output from the orientation sensor, a target image setting unit adapted to output a target image, a detecting unit adapted to detect the position of an index

in the target image by performing a template matching process between a template image of the index and the target image, an updating unit adapted to update the calculation information stored in the storage unit on the basis of a detected position of the index detected by the detecting unit, and a calculation unit adapted to calculate the orientation and/or position of the measurement object on the basis of a measured value from the orientation sensor and the calculation information updated by the updating unit.

Claim 1 has been amended to recite a prediction position calculation unit adapted to calculate a prediction position of an index in an image picked-up by the image pick-up device on the basis of the measured orientation. In addition, Claim 1 has been amended to recite that the target image setting unit is adapted to extract an image area of the index from the picked-up image on the basis of the prediction position of the index, rotate the extracted image area using a roll angle, according to the measured orientation, of the image pick-up device, and output the rotated image area as a target image.

By this arrangement, the invention as defined in amended claim 1 not only outputs a target image using a measurement value of a sensor, but also performs this function by calculating a prediction position of an index in an image picked up by an image pick-up device on the basis of a measured orientation, extracting an image area of the index from the picked-up image on the basis of the prediction position of the index, and rotating the extracted image area using a roll angle according to the measured orientation.

In contrast, the patents to Chen et al., Schneider, and Rallison et al. are not understood to disclose or suggest a prediction position calculation unit adapted to calculate a prediction position of an index in an image picked-up by the image pick-up device on the basis of the measured orientation, or a target image setting unit adapted to extract an image area of the index from the picked-up image on the basis of the prediction position of the

index, rotate the extracted image area using a roll angle, according to the measured orientation, of the image pick-up device, and output the rotated image area as a target image, as recited by amended Claim 1.

Rather, the Chen et al. patent is understood to merely disclose generating a 3D model from a 2D image obtained by a device 5, superimposing a virtual image generated according to the 3D model onto a video image, and adding marker information to a 3D image by adding a marker to the 2D image. The patent to Schneider is understood to show, for example in Fig. 3, the calculation of a correlation between a follow image and a lead image using pattern matching, and the rotation, translation, and scaling of the follow image on the basis of the calculated result. And the Rallison et al. patent is understood to merely show a conventional head-mounted display having a tracker for outputting an indication of the orientation, attitude, or position of the display. However, these patents are not understood to disclose or suggest at least the above-mentioned features of amended Claim 1.

MPEP § 2142 requires the cited art to disclose or suggest *all* the claimed features to establish a prima facie case of obviousness. Here, the cited art is not understood to disclose or suggest at least the prediction position calculation unit and the target image setting unit recited by amended Claim 1, as noted above. Therefore, the Office is not understood to have satisfied its burden of proof to establish a prima facie case of obviousness against amended Claim 1. For this reason, Applicant respectfully requests that the rejection of Claim 1 be withdrawn.

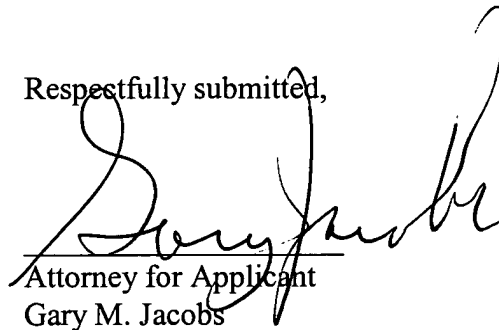
Independent Claims 20, 24, and 28 recite features similar to amended Claim 1 and are believed patentable for similar reasons. The dependent claims are believed patentable

for at least the same reasons as the independent claims, as well as for the additional features they recite.

In view of the foregoing, this application is believed to be in condition for allowance. Favorable reconsideration, withdrawal of the outstanding rejections, and the issuance of a Notice of Allowance are respectfully solicited.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gary Jacobs", is written over a horizontal line.

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